# PATENT SPECIFICATION

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## (54) IMPROVEMENTS IN AND RELATING TO WALL DECORATIONS

(71) We, SEIBU POLYMER KASEI KABUSHIKI KAISHA, a corporation duly organised and existing under the laws of Japan, located at 16-15 1-chome Minami Ikebukuro, Toshima-ku, Tokyo, Japan, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to wall decoration materials.

Wall decorating materials presently in general use are made of a paper which has been simply coated with a sheet of synthetic resin such as polyvinyl chloride. The material is then printed or embossed. This wall decorating material is pasted onto the wall by means of an adhesive applied to the surface of said paper.

This type of wall decorating material has drawbacks in that air permeability is lost due to the coating of a thin sheet of synthetic resin all over the surface of the basic material and the moisture contained in the glue which is absorbed in the paper evaporates and dries very slowly when an adhesive such as a glue is applied to the paper so that it may be pasted to the wall. When the humidity in the room is high, for example, during the rainy season, it often happens that mould grows on the wall decorating material when moisture condenses on its surface due to the overall coating with a sheet of synthetic resin on the surface of said material. Furthermore, since the sheet of synthetic resin applied to said wall decorating material is thin, it gives the impression of flatness, the touch is poor, and the design tends to be monotonous. Moreover, paper coated with such a sheet of synthetic resin is easily torn and has a poor strength.

According to the present invention, there is provided a wall decorating material comprising a sheet of paper, a plurality of areas of adhesive synthetic resin applied to one side of said sheet at appropriate intervals, and a coarse-woven cloth as herein defined adherent to said areas of synthetic resin.

According to a further feature of the invention there is provided a process for manufacturing a wall decorating material comprising the steps of:

a) applying an adhesive synthetic resin to a plurality of discrete areas on one side of a sheet of paper at appropriate intervals,

b) placing a coarse-woven cloth as herein defined thereon,

c) heating the synthetic resin for gelation thereof, and

d) pressing the cloth without filling the space between the adhesive synthetic resin areas.

The coarse-woven cloth is such that adhesive synthetic resin can be forced through it by pressing.

Following is a description by way of example only and with reference to the accompanying drawings of methods of carrying the invention into effect.

In the drawings:—

Figure 1 is a diagram showing one method of carrying out the present invention.

Figures 2A to 2C are schematic, enlarged sections through a sheet of material at each of three successive stages of the process.

Figure 2A shows the stage in which an adhesive synthetic resin has been applied to one side of a paper.

Figure 2B shows the stage in which coarse-woven cloth has been placed over said adhesive synthetic resin.

Figure 2C shows the stage in which a paper and a cloth have been integrally attached to each other by the adhesive synthetic resin after heating.

Figures 3 and 4 are enlarged oblique views of a wall decorating material relative to the present invention.

This invention relates to a wall decorating material having a good air permeability and to a method of manufacturing said material.

As shown in Figure 1, a paper 1 is advanced over guide rollers 3 and beneath a lead roll 2. An adhesive synthetic resin 4 such as molten poly-vinyl chloride or an acrylic resin emulsion, is deposited on the paper with the result that said adhesive synthetic resin is attached to the paper 1 in zigzag lines, stripes or dots parallel to the direction of movement of the paper. (See Figure 2A.) Next, a coarse-woven cloth 5 is placed on the paper 1 which carries said adhesive synthetic resin, and this results in the stage illustrated in Figure 2B. The paper 1 and cloth 5 then pass through a heating furnace 6 in which said synthetic resin 4 gels. This results in the stage shown in Figure 2C in which the cloth 5 becomes integral with the adhesive synthetic resin, and said synthetic resin is strongly secured to the paper. A heating temperature of 170-200°C, preferably 180-190°C, is used for a poly-vinyl chloride paste while almost the same range of temperature is used for an acrylic resin emulsion.

After these processes, the material is passed between pressing rolls 7, 8 such as printing and/or embossing rolls so that the portions of said cloth overlying the adhesive synthetic resin areas are pressed into said adhesive synthetic resin areas. (See Figures 3 and 4.)

The wall decorating material thus manufactured in accordance with the present invention has a resin-free space between each of the zigzag lines, stripes or dots of adhesive synthetic resin, and each adhesive synthetic resin area is connected to the other zigzag lines, stripes or dots of adhesive synthetic resin by means of a coarse-woven cloth. In the resin-free spaces, the cloth is not secured to the paper by the adhesive synthetic resin.

The woven cloth to be used in the present invention can be any kind of material so long as the distance between yarns of the cloth is comparatively large. As an example, Victoria lawn can be used. A fibrous material suitable for making Victoria lawn is a staple fiber or flax.

As warp and woof, a single yarn of No. 30 to No. 80 count is suitable. The coarse-woven cloth is such that molten adhesive synthetic resin can be forced through it by pressing. A plain weave of 24 warps and 20 woofs per square inch is particularly suitable.

The amount of molten synthetic resin to be used and the distance between the lines, stripes or dots of the adhesive synthetic resins may be selected arbitrarily in such a way that said synthetic resin does not overlap with other resins on the paper after the gelation of the synthetic resin by heating.

The resin in gel form passes through the cloth 5 as shown in Figure 2C and a part of it covers the surface of the cloth. The adhesive synthetic resin can be used in the form of an emulsion, paste, or pellets.

The wall decorating material thus manufactured in accordance with the present invention has an air permeability due to the application of the adhesive synthetic resin to only appropriate portions of the paper instead of over the entire sheet. For this reason, the paper dries easily when it is applied to the wall and even during a spell of continuous rain, it avoids moisture condensation.

Other features of the present invention are that since the wall decorating material of the present invention is made of a coarse-woven cloth and a paper, both of which have been made integral by applying and heating an adhesive synthetic resin, unlike the conventional coating of paper with a thin sheet of synthetic resin, when press work such as an embossing is done thereon, the surface of the wall decorating material affords a three-dimensional impression and has the strength to resist tearing, in addition to an abundant durability, thereby facilitating handling.

WHAT WE CLAIM IS:—

1. A wall decorating material comprising a sheet of paper, a plurality of areas of adhesive synthetic resin applied to one side of said sheet at appropriate intervals, and a coarse-woven cloth as herein defined adherent to said areas of synthetic resin.

2. A material as claimed in claim 1, wherein the coarse-woven cloth is free of the adhesive synthetic resin between adhesive synthetic resin areas.

3. A material as claimed in claim 1 or claim 2, wherein a plurality of adhesive synthetic resin areas are formed as lines.

4. A material as claimed in any preceding claim, wherein a plurality of adhesive synthetic resin areas are formed as zigzag lines.

5. A material as claimed in any preceding claim, wherein a plurality of adhesive synthetic resin areas are formed as dots.

6. A material as claimed in any preceding claim, wherein the adhesive synthetic resin is polyvinyl chloride or an acrylic resin.

7. A material as claimed in any preceding claim, wherein the coarse-woven cloth is Victoria lawn.

8. A material as claimed in claim 7, wherein the Victoria lawn is a fabric made from a staple fiber or from flax.

9. A wall decorating material substantially as herein described with reference to and as illustrated in Figures 1 to 4 of the accompanying drawings.

10. A process for manufacturing a wall decorating material as claimed in claim 1 comprising the steps of:

a) applying an adhesive synthetic resin to a plurality of discrete areas on one side of a sheet of paper at appropriate intervals,

b) placing a coarse-woven cloth as herein defined thereon,

c) heating the synthetic resin for gelation thereof, and

d) pressing the cloth without filling the space between the adhesive synthetic resin areas.

11. A process as claimed in claim 10, wherein the plurality of adhesive synthetic resin areas are applied to the paper in zigzag lines.

12. A process as claimed in claim 10, wherein the plurality of adhesive synthetic resin areas are applied to the paper in dots.

13. A process as claimed in any one of claims 10 to 12, wherein the pressing is carried out between printing rollers.

14. A process as claimed in any one of claims 10 to 12 wherein the pressing is carried out between embossing rollers.

15. A process as claimed in any one of claims 10 to 14, wherein the adhesive synthetic resin is in the form of an emulsion or paste.

16. A process as claimed in any one of claims 10 to 14 wherein the adhesive synthetic resin is in the form of a pellet.

17. A process for the manufacture of a wall decorating material substantially as herein described with reference to the accompanying drawings.

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2 SHEETS *This drawing is a reproduction of the Original on a reduced scale*
Sheet 1

Fig. 1

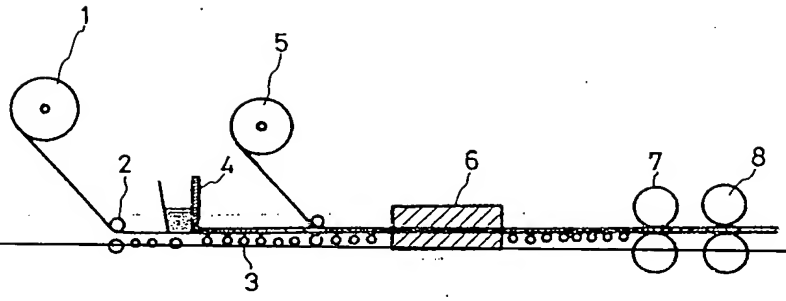


Fig. 2-A

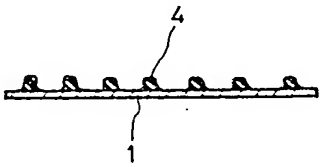


Fig. 2-B

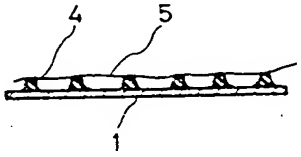


Fig. 2-C

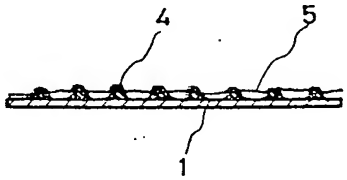

Fig. 3

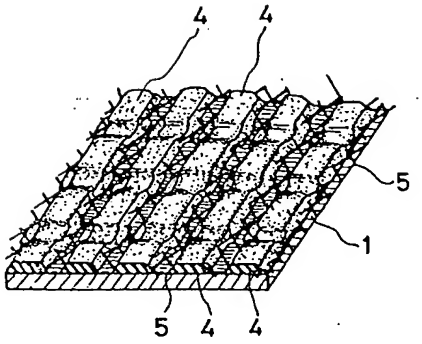


Fig. 4